



### MAPPED KARST GROUNDWATER BASINS IN THE HOPKINSVILLE 30 x 60 MINUTE QUADRANGLE

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**LEGEND**

- Area of potential karst groundwater basin development
- Area of limited karst groundwater basin development
- Inferred perennial groundwater flow route
- Subsurface overflow (high-flow) route
- Surface overflow (high-flow) route
- Groundwater basin catchment boundary
- Groundwater sub-basin catchment boundary
- Intermittent lake (not all shown)
- Stream sink or swallet
- Underflow spring (perennial)
- Overflow spring (high flow)
- Karst window or sinking spring
- Cave stream
- Other tracer-injection point
- Water well
- Tracer recovered in downstream dye receptor; spring location is unknown
- Kentucky Division of Water AKGWA spring identification number (last four digits)

**SCALE 1:100 000**

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 KILOMETERS

0 1 2 3 4 5 6 7 8 9 10 MILES

0 5000 10000 15000 20000 25000 30000 35000 40000 45000 50000 FEET

unofficial transverse Mercator projection, zone 16: 1927 North American datum

TOPOGRAPHIC CONTOUR INTERVAL 10 METERS

**Explanation**

This map shows karst groundwater basins in the Kentucky portion of the Hopkinsville quadrangle and a small part of Tennessee, determined primarily by groundwater tracer studies. It can be used to quickly identify the groundwater basins and springs to which a site may drain. Major springs and the relative size of their catchment areas can be evaluated for potential as water supplies. The map also serves as a geographic index to literature on karst groundwater in the area.

This map is designed for regional and preliminary hydrologic investigations. Features such as springs and swallets are much too small to precisely locate on this map with a scale small enough to show regional relationships. See the literature cited in the "References Cited" for detailed site descriptions. The data used to compile this map were obtained by numerous investigators over the last 34 years. The underflow spring draining a groundwater basin is assigned a unique identification number, referred to as the AKGWA number (Assembled Kentucky Ground Water database). Individual basins are identified by the underflow spring name and AKGWA number. The authors of tracer data are identified by number in the "Data Source" column of the key, and are listed in "References Cited" in order of publication or research date.

Although groundwater flow routes shown here have been established by tracer studies, with the exception of mapped cave streams, the precise flow paths are unknown and are inferred or interpreted using water-level data, geologic structure, or surface features. Arrows show the direction of groundwater flow and tracer recovery locations. Conduit flow is illustrated as either thick trunk-flow lines or thin tributary-flow lines. The locations of some groundwater basins are inferred, based on the existence of a significant spring system and the delineation of adjacent basins. The position of groundwater basin boundaries should be considered approximate because of the map's scale and because boundaries can shift during high-water conditions. Also, excess flow may exit or enter a basin via surface or subsurface overflow routes. There are probably additional overflow routes. Although most of the groundwater-tracing results shown on this map were obtained during moderate- or high-flow conditions, the groundwater basins are illustrated in base flow because base flow is the most common flow condition. The main spring draining the basin is assumed to be an underflow spring that preferentially drains base flow. Overflow springs discharge during high flow. Generally, names of groundwater basins are derived from these main springs (Worthington, S.R.H., 1991, Karst hydrogeology of the Canadian Rocky Mountains: Hamilton, Ontario, Canada, McMaster University, doctoral dissertation, 380 p.). Not all additional springs are shown because of the small map scale.

**DISCLAIMER:** This map is subject to revision upon receipt of new hydrologic data. The unshaded area (shown in white on the map) is karst. The shaded area (shown in light brown) is largely underlain by noncarbonate rocks and has minimal development of karst. Karst features are only shown in those areas where tracer tests have been conducted. Consult the "References Cited" for additional information.

AKGWA No.	Spring Name	Data Source	AKGWA No.	Spring Name	Data Source
0448	Merriwether	14	3834	Muddy Fork (Shoulders) Cave	34
0203	Mill Stream	11, 31, 32	3859	Seven Springs	34
0566	Cooksey	15, 16	3925	Vicks Branch	19
0569	Buchanan	15, 32	3926	Blue-Jacking (K), restricted area	7, 22
0854	Cadiz	24	3927	Gordon (Ky, restricted area)	25, 30
0859	Barkers Mill	23, 32	3928	Bolling (Term)	7, 8, 22
0869	River Bend	18, 31, 32	3929	Noahs (Term)	7, 8, 17, 22
1075	Boyd	23	3930	Eagle (Term)	17
1140	Hunter	23	3932	Millstone (Term)	17, 22, 23, 25
1141	Cook	6, 32	3934	Eggel	5
1150	Hargrove	16, 18, 32, 35	3935	Iszler	21
1388	Rogers	12	3936	Swanmore	16
1396	White	32	3937	MacIntosh	16
1402	Diak	28	3947	Faultline-Gray	24
1445	Hendon; also see 1857	18	3948	Ky 139 Bridge North	24
1448	Brelsford (Bellford)	31	3950	Decibel	10
1458	Garnett	31			
1457	Walton	31			
1459	Head of Casey Creek	31			
1459	Rise of Elk Fork	21			
1474	Underflow	21, 29, 32			
1475	Wright (sub-basin of Underflow)	31			
1481	Menees Cave	14			
1482	Henderson	18			
1483	Hugh Bluehole	18, 18			
1486	Glovers Cave	2, 16			
1487	Hunt	18, 27, 32			
1488	Venable	16, 18, 35			
1489	King	31			
1835	Hidden	16, 18			
1845	McGraw	16, 18, 35			
1857	Spring Hill; also see 1445	26, 27, 32			
1858	Cherry (tentative 24)	32, 31			
1863	Composite	9, 11, 20			
1864	Ky 41	14			
1865	Gray	18			
1866	Carp Bluehole	16			
1867	Fredericks	27, 29, 32			
1868	Vance	18			
1905	Adams	18, 31			
1910	Tanner	29, 32			
2519	Dry Ford	1, 2, 4			
2520	Murphy	32			
2542	Quarles	7, 8, 13, 25			
2671	Cool	32			
2672	Shlar	29, 32			
2796	Brame	33			
3117	Torrian (sub-basin of Mill Stream)	33			
3124	Cowherd	29, 32			
3125	Mosley	29, 32			
3280	Goebel Adams	33			
3740	Martin	34			
3747	Cane	18, 31, 32?			
3805	Nenies (Nichols) Cave				

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Locations of the 30 x 60 minute quadrangles covering Kentucky. This quadrangle, the Hopkinsville quadrangle, is highlighted in green.

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Cartography by Terry Houshaff

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